

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1. (previously presented) A device for vaporization injection of samples into a gas chromatography analysis instrument, comprising an elongated and constantly heated vaporization chamber, a syringe equipped with a needle, the device being configured to render vaporization of the sample liquid within the needle negligible, and further containing means for stopping and vaporizing the sample liquid above a column entrance, characterized in that a distance between an exit of the needle and the means for stopping and vaporizing the sample liquid above the column entrance is greater than 55 mm.

Claim 2 (original): A device according to claim 1, characterized in that said distance is greater than 80 mm.

Claim 3 (original): A device according to claim 1, characterized in that said needle extends into the vaporization chamber for length less than 30 mm.

Claim 4 (previously presented): A device according claim 1, characterized in that the internal channel of said needle has a diameter of less than 0.13 mm.

Claim 5 (previously presented) A device according to claim 1, in which the upper portion of said vaporization chamber is cooled or unheated.

Claim 6 (previously presented) A device according to claim 1, in which the external wall of said needle is covered by a thermal insulating material.

Claim 7 (previously presented) A device according to claim 1, in which said needle is completely formed in a thermal insulating polymer.

Claim 8 (previously presented) A device according to claim 1, in which the complete length of said vaporization chamber is greater than 10 cm.

Claim 9 (original) A device according to claim 8, in which the complete length of said vaporization chamber is greater than 15 cm.

Claim 10 (previously presented): A device according to claim 1, in which said vaporization chamber is coiled.

Claim 11 (previously presented): A device according to claim 1, in which said vaporization chamber is formed in metal.

Claim 12 (previously presented): A device according to claim 11, in which the stated vaporization chamber is formed in "silcosteel".

Claim 13 (previously presented): A device according to claim 1, in which a conventional septum or a Merlin valve are able to be alternately mounted on the injector head.

Claim 14 (previously presented): A device according to claim 1, characterized in that said vaporization chamber has a restriction in its lower part containing said stop and vaporization means.

Claim 15 (original): A device according to claim 14, characterized in that said restriction is connected to the upper part of the chamber by a funneled wall.

Claim 16 (currently amended): A device according to claim 1, characterized in that heating means for the vaporization chamber are provided operating at the

vaporization temperature of the sample in correspondence to said a restriction, and at a lower temperature in the upper part of the chamber than that in the lower part of the chamber.

Claim 17 (previously presented): A vaporization method for a sample injected via a syringe with a needle into a constantly heated vaporization chamber of a gas chromatography analysis instrument, characterized in that said sample is injected in an upper portion of said vaporization chamber, and is released in form of a band crossing said vaporization chamber at a speed, and that said liquid band is stopped by stop means and said sample is vaporized in a lower portion of the heated chamber.

Claim 18 (original): A method according to claim 17, in which said needle is inserted into said chamber for a length not greater than 30 mm and in such a way that the distance between the point of said needle and said liquid stop means is greater than 55 mm.

Claim 19 (currently amended): A device according to claim 1, in which heating means for the vaporization chamber are provided so as to achieve a maximum heating effect to vaporize all the sample towards the base of the chamber, and a lower temperature in the upper part portion of the chamber.

Claim 20 (currently amended): A method according to claim 17, in which the lower portion of the chamber is heated ~~to achieve the maximum heating effect to~~ vaporize all the sample, and the upper ~~part~~ portion of the chamber is ~~heated to~~ operated at a lower temperature than that of the lower portion of the chamber.

Claim 21 (previously presented): A device for vaporization injection of a sample into a gas chromatography analysis instrument, comprising an elongated vaporization chamber, a syringe equipped with a needle within which is the sample that has not been vaporized, a stop and vaporization means for stopping injection of the sample and vaporizing liquid of the sample within the elongated vaporization chamber, means for heating at least part of the elongated vaporization chamber to a temperature above a vaporization temperature of the sample, a distance between a free end of the needle and the stop and vaporization means being greater than 55 mm.

Claim 22 (currently amended): A device as in claim 21, further comprising heating means for the elongated vaporization chamber, the heating means being arranged and configured to vaporize all the sample towards a base of the elongated vaporization chamber and provide a temperature in an upper ~~part~~ portion of the vaporization chamber that is lower ~~then~~ than at ~~the~~ a base.

Claim 23 (currently amended): A vaporization method for a sample injected via a syringe with a needle within a vaporization chamber of a gas chromatography analysis instrument, comprising heating at least a lower portion of the vaporization chamber to a temperature above a vaporization temperature of a sample to be analyzed, injecting the

sample in correspondence or in proximity of an upper portion of the vaporization chamber, releasing the sample in form of a liquid band crossing the vaporization chamber at a speed, stopping the liquid band by stop means; and vaporizing the sample in a lower portion of the heated vaporization chamber.

Claim 24 (currently amended): A vaporization method as in claim 23, wherein the heating of the lower portion of the chamber includes heating to vaporize all of the sample, further comprising heating operating at a lower temperature in an upper part portion of the vaporization chamber ~~to a temperature that is less than that within the~~ lower portion of the vaporization chamber.